

In re Patent Application of:
KARL GUENTHER, et al
Serial No. 10/685,300
Filing Date: 10/14/2003

In the Claims:

1. (currently amended) A transportation system comprising:
a running surface;
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface; and
a rigid suspension member rotatably connected to the carrying vehicle;
a car body suspended from the carrying vehicle rigidly attached to the
suspension member, wherein a ~~center~~ single axis of rotation of the car body is above a
connection ~~therebetween~~ of the suspension member to the carrying vehicle, thus
effectively extending a radius of rotation ~~thereof~~ of the car body, the car body having a
floor surface for carrying a load thereon, wherein the floor surface moves from a
horizontal orientation to a tilted orientation during operation of the carrying vehicle along
a curved portion of the running surface so as to result in a pendulum like movement of
the floor surface and thus the load.

2. (original) A system according to claim 1, wherein the carrying vehicle
comprises:
a truck;
wheels operable with the truck for rolling along the running surface; and
a chassis carried by the truck, wherein the car body is suspended therefrom.

Claim 3 (cancelled)

4. (currently amended) A system according to claim ~~3~~ 1, wherein the suspension
member is pivotally connected to the carrying vehicle, and wherein the car body is
allowed to freely rotate about a longitudinal axis thereof while having a restricted
movement in a longitudinal direction.

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5. (original) A system according to claim 1; further comprising at least one of a generally U-shaped duct having a slot therein formed by opposing flanged portions, an I-beam having opposing lower flanged portions, and an I-beam pair having opposing outer flange portions, upper surfaces of which form the running surface.

6. (original) A system according to claim 1, further comprising a rail pair forming a track carried by the running surface, wherein the carrying vehicle is operable thereon.

7. (currently amended) A system according to claim 6, wherein at least a portion of the track is superelevated by at least eight degrees, and wherein the superelevated track includes one rail of the rail pair at a different elevation than the opposing rail.

8. (currently amended) A system according to claim 1, wherein at least a portion of the running surface is superelevated, and wherein the superelevated running surface includes one side of the surface at a different elevation than an opposing transverse side thereof.

9. (previously presented) A system according to claim 8, wherein the superelevated portion of running surface is inclined by at least eight degrees.

10. (original) A system according to claim 8, wherein the at least a portion of the running surface includes curved portions thereof.

11. (currently amended) A transportation system comprising:
a running surface including a steel rail pair forming a track;

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a support structure for positioning the running surface above ground level;
a truck having steel wheel pairs operable along the running surface with the wheel pairs synchronized and tapered for self centering while rolling along the track ;
a chassis carried by the truck; and
a car body suspended from the chassis, wherein a center of rotation of the car body is ~~at or~~ above the connection therebetween, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the truck along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

12. (previously presented) A system according to claim 11, further comprising a generally U-shaped duct having a slot therein formed by opposing flanged portions, an upper surface of which forms the running surface.

13. (original) A system according to claim 11, further comprising at least one of an I-beam having opposing lower flanged portions and an I-beam pair having opposing outer flange portions, upper surfaces of which form the running surface.

14. (original) A system according to claim 11, wherein at least two chassis are connected to form a train, and wherein the at least two chassis are connected to a single truck for articulating movement therewith.

15. (original) A system according to claim 11, wherein the support structure comprises a column and cooperating arm portion for supporting the running surface above the ground level.

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16. (original) A system according to claim 11, wherein the truck comprises a frame having wheels operable therewith for transporting the truck along the running surface.

Claims 17 and 18 (cancelled)

19. (currently amended) A system according to claim 11, wherein the track is superelevated at least along a curved portion thereof and wherein the superelevated track includes one rail at a different elevation than an opposing rail.

20. (currently amended) A system according to claim 11, wherein at least a portion of the running surface is superelevated, and wherein the superelevated running surface includes one side of the surface at a different elevation than an opposing transverse side thereof.

21. (previously presented) A system according to claim 20, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

22. (original) A system according to claim 11, wherein the chassis is carried by at least two trucks.

23. (original) A system according to claim 11, wherein the car body comprises at least one of a passenger car, a freight car, and a combination thereof.

24. (previously presented) A system according to claim 23, wherein a plurality of

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car bodies is suspended from a plurality of chassis, wherein one chassis is connected to an adjacent chassis, and wherein adjacent car bodies are accessible therebetween.

25. (original) A system according to claim 11, further comprising a suspension member for removably suspending the car body from the chassis, the suspension member having a proximal end operable with the chassis and an opposing distal end connected to the car body.

26. (previously presented) A system according to claim 25, further comprising a connector operable with the suspension member for operably attaching and detaching the car body from the chassis, the connector having a vise for receiving the suspension member proximal end therein and a turnbuckle for securing the vise in a locking position.

27. (original) A system according to claim 25, wherein the suspension member comprises:

- a first support carried by the chassis; and
- a linking arm connected between the car body and the first support.

28. (previously presented) A system according to claim 27, further comprising:
a first bracket pair affixed to the car body; and

a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the chassis, and wherein the center of rotation is laterally displaced during rotation of the car body.

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29. (original) A system according to claim 27, further comprising:
an arcuate member rotatably operable with a surface of the first support;
a bracket having a proximal end rotatably operable with the arcuate member and
a distal end affixed to the car body.

30. (original) A system according to claim 29, wherein the surface of the first
support comprises a concave shape for receiving the arcuate member.

31. (original) A system according to claim 29, wherein the arcuate member is
circular in cross section.

32. (original) A system according to claim 27, wherein the linking arm comprises
at least one of a spring, a piston, and a combination thereof.

33. (original) A system according to claim 11, further comprising a winch and
cable mechanism carried by the chassis and operable for raising and lowering the car
body therefrom.

34. (original) A system according to claim 11, further comprising a grapple
operably connected to the chassis, and wherein the car body comprises a container for
carrying freight therein.

35. (original) A system according to claim 34, wherein the grapple comprises:
an upper member removably suspended from the chassis; and
opposing side members slidably connected to the upper member for cradling the

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container therebetween.

36. (previously presented) A system according to claim 11, further comprising a driving means operable with the truck for driving the truck along the running surface, wherein wheels operable therewith rotate at a synchronized speed.

37. (original) A system according to claim 36, wherein the driving means comprises an electric motor operable with power delivered thereto from a contact strip carried with the running surface.

38. (currently amended) A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface; and
a rigid suspension member for removably suspending a car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end for connecting to the car body;
a car body suspended below the carrying vehicle rigidly attached to the suspension member, wherein a center single axis of rotation of the car body is thereabove above a connection of the suspension member to the carrying vehicle, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

Claim 39 (cancelled)

40. (currently amended) A system according to claim ~~39~~ 38, wherein the

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suspension member comprises:

- a first support carried by the carrying vehicle; and
- a linking arm connected between the car body and the first support.

41. (previously presented) A system according to claim 40, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

42. (original) A system according to claim 40, further comprising:
an arcuate member rotatably operable with a surface of the first support;
a bracket having a proximal end rotatably operable with the arcuate member and
a distal end affixed to the car body.

43. (original) A system according to claim 42, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

44. (original) A system according to claim 42, wherein the arcuate member is circular in cross section.

45. (original) A system according to claim 40, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

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46. (currently amended) A transportation method comprising:
suspending a running surface above ground level;
operating a carrying vehicle longitudinally along the running surface, wherein the running surface includes a curved portion; and
providing a rigid suspension member;
pivotally connecting the suspension member to the carrying vehicle at a pivot location thereon;
rigidly attaching a car body to the suspension member for suspending a the car body from the carrying vehicle for while providing a center single axis of lateral rotation of the car body above the carrying vehicle pivot location, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along the curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

47. (original) A method according to claim 46, further comprising providing a U-shaped duct for transporting the carrying vehicle therein, wherein flange portions of the duct provide the running surface.

48. (original) A method according to claim 46, further comprising providing at least one I-beam for operating the carrying vehicle along flanges thereof, which flanges form the running surface.

49. (original) A method according to claim 46, further comprising detaching the car body from the carrying vehicle for operating the carrying vehicle along the running surface.

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Claim 50 (cancelled)

51. (currently amended) A method according to claim 50 ~~46~~, wherein the ~~proximal end connecting comprises pivotally connecting the proximal end to the chassis for allowing~~ rigid suspension member permits a free transverse movement of the car body and ~~limiting~~ limits a longitudinal movement thereof.

52. (previously presented) A method according to claim 46, further comprising:
placing a track on the running surface for receiving the wheels of the carrying vehicle; and
superelevating the track at least along the curved portions of the running surface.

53. (original) A method according to claim 52, wherein the superelevation is at least eight degrees.

54. (currently amended) A method according to claim 46, further comprising:
attaching multiple carrying vehicles together for operating along the running surface;
attaching a plurality of car body bodies to each ~~each~~ at least some of the multiple carrying vehicles; and
providing access between adjacent car bodies.

55. (original) A method according to claim 46, wherein the car body comprises a container, and wherein a grappling mechanism is suspended from the carrying vehicle for transporting the container.

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56. (original) A method according to claim 46, further comprising removing the car body from the carrying vehicle.

57. (original) A method according to claim 46, further comprising:
aligning a surface of a platform with a floor of the car body;
placing rolling elements onto the surface and the floor; and
pushing a freight container from the platform to the car body over the rolling elements; and
covering the rolling elements for permitting pedestrian traffic thereon.

58. (currently amended) A method according to claim 46, further comprising:
operating at least a second carrying vehicle along the running surface;
connecting the at least second carrying vehicle to the carrying vehicle to ~~from~~
form a train;
connecting a second car body to the at least second chassis;
limiting longitudinal rotation of each car body about the chassis carried thereby
while permitting a free transverse rotation thereabout; and
providing access between car bodies at adjacent ends thereof.

59. (original) A method according to claim 46 comprising:
disconnecting the car body from the carrying vehicle;
suspending a grapple from the carrying vehicle; and
carrying containers within the grapple for transporting thereof.

60. (previously presented) A transportation system comprising:
a running surface having a rail pair forming a track carried thereby;
a support structure for positioning the running surface above ground level;

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a truck operable along the running surface, the truck having wheel pairs
synchronized and tapered for self centering while rolling along the track;

a chassis carried by the truck and;

a car body suspended from the chassis.

61. (previously presented) A system according to claim 60 wherein the rail pair
and wheel pairs are steel.

62. (previously presented) A system according to claim 60, wherein the track is
superelevated at least along a curved portion thereof, and wherein the superelevated
track includes one rail at a different elevation than an opposing rail.

63. (previously presented) A system according to claim 62, wherein the
superelevated portion of the running surface is inclined by at least eight degrees.

64. (previously presented) A system according to claim 62, wherein the
superelevation is within 16 degrees and a swing out of the car body to within 16
degrees beneath the chassis, thus permitting a combined total swing out of up to 32
degrees of tilt for permitting increased car body speeds on curves.

65. (previously presented) A system according to claim 60, wherein the wheel
pairs include coned wheels.

66. (previously presented) A system according to claim 60, wherein at least one
of the wheel pairs comprises electrically coupled motor wheels.

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67. (previously presented) A system according to claim 66, wherein the electrically coupled motor wheels include double flanged wheels.

68. (currently amended) A transportation system comprising:
a running surface having a rail pair forming a track carried thereby;
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface, the carrying vehicle having wheel pairs with each wheel tapered, the wheel pairs synchronized for self centering while rolling along the track; and
a car body suspended from the carrying vehicle.

69. (previously presented) A system according to claim 68, wherein a center of rotation of the car body is above a connection to the carrying vehicle thus effectively extending a radius of rotation thereof, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

70. (previously presented) A system according to claim 68, wherein the track and wheel pairs are steel.

71. (currently amended) A system according to claim 68, wherein the track is superelevated at least along a curved portion thereof, and wherein the superelevated track includes one rail surface at a different elevation than an opposing rail surface.

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72. (previously presented) A system according to claim 71, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

73. (previously presented) A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface;
a car body;
a suspension member suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body, the suspension member having a first support carried by the carrying vehicle, a linking arm connected between the car body and the first support, an arcuate member rotatably operable with a surface of the first support, and a bracket having a proximal end rotatably operable with the arcuate member and a distal end affixed to the car body.

74. (previously presented) A system according to claim 73, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

75. (previously presented) A system according to claim 73, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

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76. (previously presented) A system according to claim 73, wherein the arcuate member is circular in cross section.

77. (previously presented) A system according to claim 73, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

78. (previously presented) A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface; and
a car body suspended below the carrying vehicle, wherein a center of rotation of the car body is thereabove;

a suspension member for removably suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body, wherein the suspension member includes a first support carried by the carrying vehicle and a linking arm connected between the car body and the first support, and wherein the linking arm includes at least one of a spring, a piston, and a combination thereof.

79. (previously presented) A system according to claim 78, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

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80. (previously presented) A system according to claim 78, further comprising:
an arcuate member rotatably operable with a surface of the first support;
a bracket having a proximal end rotatably operable with the arcuate member and
a distal end affixed to the car body.

81. (previously presented) A system according to claim 78, wherein the surface
of the first support comprises a concave shape for receiving the arcuate member.

82. (previously presented) A system according to claim 78, wherein the arcuate
member is circular in cross section.

83. (previously presented) A transportation system comprising:
a running surface having a rail pair forming a track carried thereby, wherein the
track is superelevated at least along a curved portion thereof.
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface; and
a car body suspended from the carrying vehicle.

84. (previously presented) A system according to claim 83, wherein a center of
rotation of the car body is above a connection to the carrying vehicle thus effectively
extending a radius of rotation thereof, the car body having a floor surface for carrying a
load thereon, wherein the floor surface moves from a horizontal orientation to a tilted
orientation during operation of the carrying vehicle along a curved portion of the running
surface so as to result in a pendulum like movement of the floor surface and thus the
load.

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85. (previously presented) A system according to claim 83, wherein the track and wheel pairs are steel.

86. (previously presented) A system according to claim 83, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

87. (previously presented) A system according to claim 83, wherein the wheel pairs are synchronized for self centering while rolling along the track